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Combat Crew

Strategic Air Command

SAC's 39th Anniversary

MARCH 1985
★★★★

"APPEARANCE, FITNESS AND DISCIPLINE—

Two months ago, I sent a message to the field announcing that on 1 March 1985 a new set of SAC IG Special Interest Items would take effect. These SIIs are aimed directly at measuring those qualities which experience has taught me, personally and as a commander, are the foundation of both individual and unit effectiveness. They build on the emphasis you have already seen from the IG with respect to appearance, courtesy and weight management. Added to this list you will now find physical fitness, open ranks inspections and use of seat belts. Lest you think SAC is being turned into some sort of universal boot camp, let me make clear why this increasing attention to how you feel, look and perform both on and off duty.

Let's start with appearance. I've heard the argument for many years from many people that how you look doesn't make any difference as long as you do your job well. That may be true in many lines of work — but **not** in a profession, which by definition involves public safety or security. The cornerstone of the trust which the American people place in the professions which serve their vital interests — doctors, lawyers, the military, police officers and so on — is a confidence born largely of how they look. In other words, image — it's that simple. If you doubt that, stop for a moment and reflect on the methods used by the image makers in our society — TV, movies, political cartoonists — when they want to make a professional look ridiculous and incompetent. More often than not, they are portrayed as fat and sloppy. Does that mean fat, sloppy people are necessarily ridiculous and incompetent? Of course not — but in a **professional** that sort of image makes a terrible impression, because the public draws a direct connection between personal appearance and competence. Would you feel comfortable about seeking medical advice on diet and fitness from a wheezing, overweight doctor in dirty, rumpled clothes littered with cigarette ashes? Your reaction would probably be to say, "Physician, heal thyself," and walk out.

That sort of interpersonal equation holds just as true for those of us in military uniform. At the core, to the public we serve, how we look equates to how well we're likely to perform. One final point on this subject — as the IG I've seen that assumed one-to-one relationship between appearance and performance borne out in every unit I've visited. Somehow, the best run outfits always seem to be the best looking. A coincidence? I don't think so.

So, what about fitness? By weigh-ins and aerobics testing, is the IG trying to create a command of jocks ready to compete in the 1988 Olympics? Far from it. The goal has to do with one, weight control; two, health; and three, ability to withstand the physical and mental stress of our daily routines and the unexpected, whether ORIs or real world crises involving either our personal or professional lives.

First, fitness and weight loss. Medical science has discovered that the human body has a weight "set point," which it will fight to maintain when confronted with a diet program. The body will go as far as to lower its metabolism in order to burn fat less slowly as caloric intake is reduced. Over time the set point can be lowered, but doing it by diet alone is a long, frustrating process. The surest, quickest alternative is to combine reduced food intake, a balanced diet and regular exercise.

Second, fitness and health. The evidence supporting a direct link between fitness and not only physical but mental well being is now overwhelming. No one has made this point better than Dr. Kenneth Cooper of aerobics fame, whose lifelong commitment to cardiovascular fitness has won wide acclaim. I keep the following quote from his book, **The Aerobics Program for Total Well Being,** taped inside my briefcase. Whenever my weary spirit protests dragging my 45 year old bones to the gym for its thrice weekly punishment, I read Cooper's words and they invariably push me toward the door:

> "When you become so totally committed to a concept or belief as I am to aerobics, it's easy to become so enthusiastic that people think you're getting carried away. Let me share with you a few of the latest wonders — all documented by scientific research — of aerobics:
>
> - Higher levels of energy for longer periods during the day
> - Improved digestion and control of constipation
> - A realistic way to lose and control weight
> - Bones that will continue to be strong and healthy as you grow old

Combat Crew

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ON OUR COVER

As SAC celebrates its 39th anniversary, Combat Crew salutes the command's bombers past, present and future. Clockwise from upper right: B-36, B-58, B-1B, FB-111, B-52, B-47, B-50 and B-29.

THE MARKS OF A PROFESSIONAL"

- Improved intellectual capacity and increased productivity
- Better and more effective sleep
- A very effective way to control depression and other emotional disturbances
- Relief from stress at the end of a pressure-packed day, without resorting to the use of alcohol or drugs
- Significant added protection from heart disease
- Maximum benefits of exercise for a minimum output of your time — say about 1 hour and 20 minutes a week."

Third, and finally, on the subject of fitness, I want to underscore Cooper's emphasis on stress management. As the IG, I'm probably the premier stress producer in SAC — that's the nature of the job. Short of actual combat, an IG visit tops the list in generating the sustained, intense pressure which leads to a stressful, anxious environment — long hours, little sleep, hard work and lots of tough problems to solve. As a wing commander, I knew from previous, bitter experience that my ability to stay alert and lead the battle against the IG was a direct function of my state of fitness. Just over ten years ago, I got caught up in a crash Task Force effort at the highest levels of policy making in Washington. Believing, even in my modest role, that I had the fate of the nation on my shoulders, I was turning in 20-hour days, seven days a week. That bit of stupidity cost me a trip to the hospital and several months off flying status. I sacrificed my body and it got even. I learned for all time, however, the limits of my physical endurance and ability to handle stress without the deep reserves built by regular, vigorous exercise. That sort of stress can visit any of us at any time. If you don't believe it, talk to Col Bob Marquette, Commander of the 5th Bomb Wing at Minot. He got tapped on a moment's notice to head up an investigation of a B-52 crash atop a rugged, freezing mesa in Arizona. The enormous physical and emotional stress of battling snow, cold and treacherous terrain in search of wreckage and clues to causes of the mishap was a severe test of stamina and fortitude for his team. Other examples of sudden, wrenching stress abound — short notice TDYs to austere overseas locations; a family member struck down by serious illness or death; disasters, either natural or manmade affecting your unit; or, God forbid, orders to a combat zone. As a professional, you are expected, because it is your **duty**, to be ready to meet and overcome any of these challenges. Are you?

That brings me to the last word in the title of this article — discipline, or, more to the point, **self** discipline. My definition of self discipline is this: doing what's right without being told. Having the will, courage and common sense to met the high standards of our profession from a sense of duty, obligation and integrity — not for fear of punishment or desire for approval. As the IG, as I did as a commander, I look carefully at the indicators of self discipline in my visits, because they are infallible clues to the health of a unit. Attention to detail; religious use of tech data and checklists; speed on the flight line; use of seat belts; discussing problems openly and honestly; clean, well kept work areas; and yes, personal appearance and fitness — these are some of the key items on my pocket guide for distinguishing the superior units from the average or marginal.

That's also why I've added fitness testing, open ranks inspections and seat belt checks to our menu of Special Interest Items—to get a more accurate gauge of unit health; and to encourage commanders at all levels to do the same. In the final analysis, our purpose is not simply to measure unit effectiveness but, more importantly, to promote it. That makes our job easier, you healthier and SAC stronger. Now, who could refuse an offer like that? ★

Brig Gen George Lee Butler
HQ SAC Inspector General

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B-36 REMEMBERED

• • • A SAC crew chief looks back

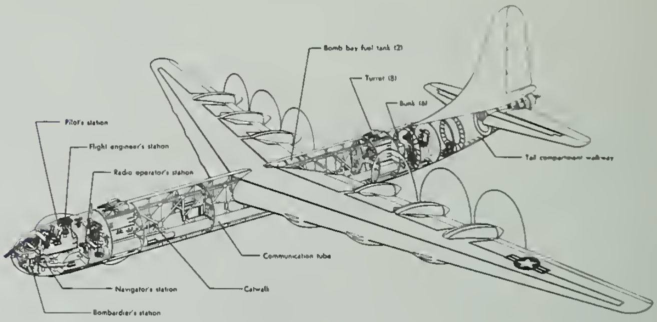
CMSgt Richard L. Ott (Ret.)

Holding the rank of Private, my career as a SAC maintenance man began in 1951 at Rapid City AFB (now Ellsworth) in B-36 engine building. The 28th Strategic Reconnaissance Wing had the RB-36D assigned then, converting to the RB-36H in mid 1952. To a young 18-year old, that B-36 with its 163 foot fuselage and 230 wing span was a beautiful sight. It was a machine that grew on you and quickly got in your blood.

The B-36H was assigned to the 28th until the summer of 1957 when the wing began converting to the B-52D. By then I was a Tech Sergeant and crew chief assigned to the 717th Bomb Squadron. On 16 September 1957 my aircraft, 56-615, the thirteenth to arrive, landed after we made 16 touch-and go's. It had seven hours on it when we left Moses Lake, Washington. To be the "owner" of a brand new B-52D was another proud moment of my career. The B-52D was an excellent airplane for a maintenance man, but the B-36 was still my favorite — it was a challenge to any crew chief. Today's maintenance person most likely would regard the B-36 air force as a "horse and buggy" air force, but an airplane capable of takeoffs at 370,000 pounds gross weight, top speed of over 400 knots at altitudes of over 40,000 feet is definitely far from the horse and buggy days. The B-36 was not only big but the state of the art design of its systems and components was both modern and unique. Here's a short rundown on some of the B-36's systems:

Propulsion System: The B-36 was powered by six R-4360 Pratt and Whitney radial engines and four J-47-19 General Electric turbo jet engines hung in pod (bor-

Schematic of an early model B-36 without jet engines and with several gun turrets.



A close-up of the R-4360 Pratt and Whitney engine.

B-36 flight line at Carswell AFB.

Loading up gear for a long B-36 mission.

Snow removal from B-36 wing at Fairchild AFB in Jan 1955.

rowed from the B-47 inboard pod design) from each wing tip. Each jet engine developed 5200 pounds of thrust and was referred to as J-1 and J-2 on the left wing and J-3 and J-4 on the right wing. The radials were mounted on the rear of the wing so they were called pushers. Each engine contained 28 cylinders, arranged in four rows and seven banks. The -41 developed 3,500 horsepower and the later -53, which was fuel injected, produced 3800. The -41 used a high tension ignition system with seven magnetos while the newer -53 used the low tension system, which was more efficient at high altitude, with only four magnetos. The firing order was relatively simple even for 28 cylinders. Both engines were supercharged which could produce from 65-69 inches of manifold pressure for takeoff power. Each reciprocating engine had a permanently installed engine analyzer which could indicate to the flight engineers or crew chief blown cylinders, shorted spark plugs, open or shorted spark plug leads or dead magnetos. This was the crew chief's best friend when you realize that each engine had 56 spark plugs, 56 ignition leads and either seven or four magnetos, depending on the engine model. Each engine was also water injected during high power requirements. A water alcohol solution was injected directly into the induction system, which was an aid in cooling the engine. At the beginning of water injection, fuel flow was automatically reduced (it was called "derichment") an amount equal to the water. It also increased the density of the air, which in turn increased horsepower output around 300 hoursepower at takeoff power. The alcohol was mixed in the water only to prevent freezing at high altitude.

Propellers: The propellers were Curtis Electric reversible full feather and turned an arc of 19′ 6″. They were automatically synchronized to insure that each radial would turn at exactly the same speed, which at takeoff was 2800 rpm. During the ice and snow season at Ellsworth, the favorite way to perform pre takeoff engine checks was to "reverse 2 and check 2 and let 'er slide on takeoff." Each was reversible for braking on landing or an abort. They would reverse in symmetrical pairs, 1 and 6, 2 and 5, or 3 and 4, or all six together depending on the weight, runway conditions, how many were running and the desire of the aircraft commander.

Control Surfaces: Control surfaces were unique only in their size. To reduce control pressure for the pilot each was moved by a servo tab, the same as the B-52 control tab. The flaps were in six segments, one between each engine. They were activated by an electric motor on each flap and were synchronized to insure each symmetrical pair remained within one degree of each other during raising or lowering. Due to the size of the surfaces you could never park one tailed into the wind. At Ellsworth you always parked them nosed **north.**

Landing Gear: In order to spread the huge weight of the aircraft to allow its operation on thinner runways and taxiways, the main gear used was called the "Roller Skate" type and retracted inboard. The nose gear was conventional, steerable and retracted forward. All were actuated by hydraulic actuators.

Brakes: The brakes were hydraulic expander tube type on both main landing gears. When they were well worn you could hear a loud squeal when applied during taxiing, similar to the C-124.

Electrical Supply System: The B-36 was the first aircraft to use alternators instead of generators. They caused less arcing at high altitudes and allowed the use of smaller wires, thus saving weight. Engines 2-3-4-5 each had a 30 KVA alternator mounted on the forward end. They were driven at a constant speed by a constant speed drive, coupled direct to the engine by a drive shaft, and could be operated either paralleled or isolated. For systems requiring DC, transformers-rectifiers were provided, three forward and three aft. Access on the ground to the alternator and CSD was through the tunnel on the leading edge of the wing.

Fuel System: Fuel storage was in six main integral tanks and two auxiliary tanks, all in the wing or wing

Cont'd on page 24

More of — "Ya Gotta Have Faith"

You might not remember — but back in August 1980 we discussed flaps up approaches in the B-52. A lot has happened since that article was published: A flaps up approach and go around is now a pilot upgrade proficiency item and is evaluated during annual 60-4's; there have been several emergency flaps up landings in the B-52; and CFIC now demonstrates flaps up touch and go landings to instructor candidates. So we think it's time to discuss "no flappers" again. Since the original article talked primarily about the approach phase, we will just review the high points, and our discussion will center around the "white knuckle" phase — the landing.

There are a number of emergencies which will commit you to a flaps up approach and landing. Although some of the procedures may differ, the aerodynamics involved are the same and the aircraft will react in a predictable way. Now let's discuss what you can expect during the approach and landing.

First, we'll review some things that are different during the approach phase. The high angle of attack (approximately 5° nose up from flaps down) gives you a different picture, especially on final approach. In fact, some pilots use the technique of raising the seat to near full up in order to see the runway better. This technique has some real disadvantages. Different seat position makes it difficult to see some of the instruments; the pilots' position relative to the flight controls is quite different and therefore can make it difficult to get full control travel; and, most significantly, the landing attitude at touchdown will look much different than you are expecting. It is better to have your seat just slightly higher than the normal flaps down landing position and sacrifice a little of the picture on final for a normal picture of the landing attitude just prior to touchdown. The thing to remember is that the aircraft is already in the landing attitude during final approach and the picture will look the same from final through touchdown. Another item to remember: you are flying angle of attack (AOA) and since AOA is airspeed, and thrust equates to climb or descent (really, it does), you must precisely control aircraft pitch throughout the approach and landing. Let's say you're flying an ILS flaps up to the landing; once established on your desired approach speed very small pitch inputs are all that is required to maintain your speed. Naturally, thrust cannot be ignored. If you descend below glide slope and you haven't changed your pitch, then all you need is a thrust increase to return to the glide slope. This is not to say that if you are above or below glide slope you don't use pitch to return to it; if the deviation is large enough you will need to make both pitch and thrust adjustments.

With this in mind let's talk about a critical part of the approach and landing — airspeed control. With flaps up, airspeed can be difficult to bleed off, especially while descending on final, and excess airspeed won't help much during the landing. Slow is not neat either! At approach speed with the flaps up you are on the back side of the thrust curve. Consequently, if you make a pitch increase before a thrust increase the result will be increased sink rate. And the more the pitch (AOA) is increased the quicker the aircraft slows and sink rate builds. By now you should have figured out that the key to a successful flaps up landing is a stabilized, well controlled final approach. An ILS is the most preferred approach because the glide slope will assist you in maintaining precise pitch control and consequently airspeed. Okay, enough review, let's get to the meat of this — the landing.

Well there you are, stabilized on glide slope and on speed; now it's time to relax a bit and mentally prepare yourself for what is about to transpire. Down to decision height everything should be familiar, it's from 200 feet to touchdown that you are exploring new territory.

First of all, don't abandon the ILS glide slope at decision height. Since you're in a nose high attitude you may be tempted to lower the nose slightly to get a better look at the runway and acquire your visual aim point, with the resultant descent below glide path, acceleration, and landing short of your original aim point. Remember, if you maintain ILS glide path, you should touch down where the glide slope intersects the runway — decreasing pitch may cause you to land short and exceed structural limits at touchdown. What you must do is pick up your visual crosscheck in conjunction with your instrument crosscheck. As you look at the runway, your aim point (fixed distance markers — 1,000 feet from the threshold) should remain the same and this in conjunction with the glide slope will help you maintain your landing attitude.

At 100 feet you're only 10-12 seconds from touchdown, and since a flare is normally not required nor desired (We know from experience that you'll have to consciously resist the natural urge to flare just prior to touchdown), things seem to happen fast. By crosschecking glide slope information it will help you maintain aim point and landing attitude. As altitude continues to decrease, ground effect and to a limited extent compressibility, become more pronounced. At approximately 20 feet there will be a small pitch down (about 1°) due to ground effect. Even though this pitch change is small, it is noticeable and if not corrected could result in increased descent rate and a hard landing. Remember, precise pitch control, but don't flare!

Okay, pitch control is important but what about thrust control? Obviously, good thrust control is essential to a successful landing. You can't ignore either pitch or thrust and expect to maintain a constant glide path and descent rate. If you're hot, touchdown will occur in a near level or nose low attitude causing a firm touchdown or a bounce. If you're slow you may find that once you touchdown and reduce thrust to idle you could have insufficient elevator authority to cushion the forward gear. During the last three seconds, if you corrected for the pitch down, the descent rate will decrease from approximately 635 fpm to 48 fpm resulting in a smooth touchdown of the aft gear. Think of it as flying onto the runway, thrust set, in the landing attitude. When the aft gear touches down, simultaneously retard the throttles to idle and smoothly apply full aft control column to cushion the forward gear. You may be surprised how quickly the nose drops when the throttles are reduced, but the nose gear touchdown will only be slightly more firm than that of a normal flaps down landing. In fact, most pilots are mildly surprised when the aircraft touches down — you're sitting slightly higher and there's no flare time or distance involved — it does come quick! Throughout the final approach and touchdown your stabilizer trim should not have changed and wings level will be easy to maintain due to the good lateral stability of the aircraft with the flaps up, even with crosswinds. A caution here, eliminate as many variables as possible: gusty wind conditions, landing behind a heavy aircraft with light crosswinds (disturbed vortex on the runway), or anything else which might cause controllability problems.

"A 'no flapper' is significantly different than a normal approach and landing. It requires knowledge and understanding on the part of the pilot flying the aircraft and those who are on the ground giving advice."

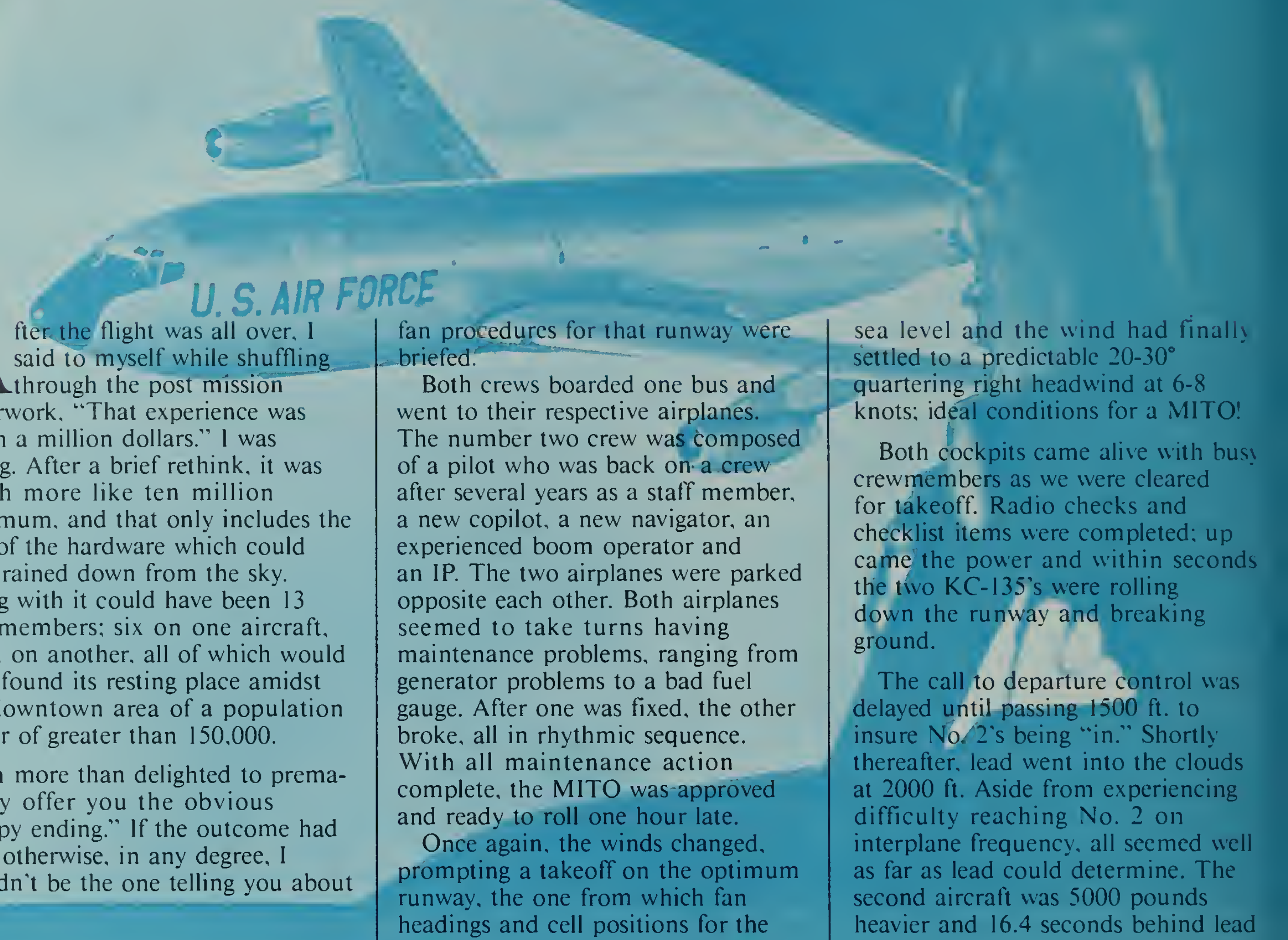
Well, you finally have the beast on the ground — time to relax, right? Wrong! It's not over yet! Full stop procedures are discussed in section three of the Tech Order so we won't go into detail, just a few reminders: brakes applied at max brake application speed will, in most cases, put your brake energy limits in the caution zone and possibly the danger zone; watch your speed, use delayed braking as much as possible and don't deploy the drag chute above 135 KIAS as it will most likely fail; beware of the ramifications of a compound emergency, i.e., body hydraulics out, etc.

Now a little "what if" talk. Let's suppose that for some reason you make an extended touchdown beyond the decision point (runway available minus landing ground run) caused by an inadvertent flare, being too fast etc, and you wisely decide to go around after the aircraft has touched down. The procedure to follow is very straight forward. Stabilizer trim should not have changed but, if it did, reset to target trim (approximately zero), take the airbrakes off, and stand up the power to something less than MRT. The aircraft will accelerate rapidly but waiting till charted flaps up unstick speed (approximately approach speed + 24 KIAS) may use up more runway than you have available. Therefore, apply at least one-half aft control column at approach speed + 5 kts and the aircraft will fly off the runway forward gear first. Immediately after unstick, relax back pressure and allow the aircraft to accelerate to desired climb speed.

Well, there it is, not as difficult as you thought! Obviously a "no flapper" is significantly different than a normal approach and landing. It requires knowledge and understanding on the part of the pilot flying the aircraft and those who are on the ground giving advice. Approaching an actual flaps up landing with only a "ya gotta have faith" attitude and little knowledge can be difficult at best. "No flappers" are simple, straight forward maneuvers and can be accomplished safely. The better prepared you are, the greater your chance for success. **FLY THE AIRCRAFT!!!!!!!!!**

IF YOU COULD SEE WHAT I SAW

Capt Crosby Ruff
912 AREFS, Robins AFB



After the flight was all over, I said to myself while shuffling through the post mission paperwork, "That experience was worth a million dollars." I was wrong. After a brief rethink, it was worth more like ten million minimum, and that only includes the cost of the hardware which could have rained down from the sky. Along with it could have been 13 crewmembers; six on one aircraft, seven on another, all of which would have found its resting place amidst the downtown area of a population center of greater than 150,000.

I'm more than delighted to prematurely offer you the obvious "happy ending." If the outcome had been otherwise, in any degree, I wouldn't be the one telling you about it.

The flight was to be a night two-ship MITO. All crewmembers were on time for the 1600 briefing. The only substitute crewmember on the lead ship was the pilot, who was also the MITO briefing officer. The briefer spoke informally from in front of the lectern. Although his 6'6" frame was a towering presence, the noisy air conditioning fan competed with his voice projection, and eventually won out. The weather briefing had changed from mission planning day, so I began refiguring the takeoff data during the inaudible period of the briefing. The forecast winds were clearly favoring the non-optimum runway, so the MITO fan procedures for that runway were briefed.

Both crews boarded one bus and went to their respective airplanes. The number two crew was composed of a pilot who was back on a crew after several years as a staff member, a new copilot, a new navigator, an experienced boom operator and an IP. The two airplanes were parked opposite each other. Both airplanes seemed to take turns having maintenance problems, ranging from generator problems to a bad fuel gauge. After one was fixed, the other broke, all in rhythmic sequence. With all maintenance action complete, the MITO was approved and ready to roll one hour late.

Once again, the winds changed, prompting a takeoff on the optimum runway, the one from which fan headings and cell positions for the radar departure had not been briefed. Several crewmembers from each aircraft considered clarifying fan headings over radio. Silence, however, won out for the sake of good radio discipline. All conditions on the ground were good for a MITO up to 2000 feet AGL where a forecast scattered deck had become closer to overcast during the hour delay. Both airplanes were light-weight. The lead ship had 70,000 pounds dry, No. 2 had 75,000 pounds dry. Reduced power setting was to be equal between them at a nice, low, throttle-back minimum EPR setting. Temperature was 60°, pressure altitude barely above sea level and the wind had finally settled to a predictable 20-30° quartering right headwind at 6-8 knots; ideal conditions for a MITO!

Both cockpits came alive with busy crewmembers as we were cleared for takeoff. Radio checks and checklist items were completed; up came the power and within seconds the two KC-135's were rolling down the runway and breaking ground.

The call to departure control was delayed until passing 1500 ft. to insure No. 2's being "in." Shortly thereafter, lead went into the clouds at 2000 ft. Aside from experiencing difficulty reaching No. 2 on interplane frequency, all seemed well as far as lead could determine. The second aircraft was 5000 pounds heavier and 16.4 seconds behind lead on takeoff roll. That, along with an operable radar and a wake turbulence avoidance fanning off runway heading, should all combine to a cushy, uneventful MITO cell departure, right? Just wait. As two finally checked in on interplane, after having to manually reset the frequency, lead pilot notified two that he was going to start a right turn to 090° heading. Two acknowledged. About 80 or 90 degrees into the 130 degree right turn, (still in the clouds with darkness now approaching), the lead copilot (from now on referred to as I) kept looking outside in the climbing turn, while the pilot stayed on instruments, flying the plane. Why I was looking out into the grey, formless murk instead of inside busily working the after takeoff climb checklist, adjusting the fuel panel or up on the overhead panel, I can't explain. I will, however, say that I, along with everyone on our crew and probably the entire crew behind us, thought that number two was behind us.

Evening IMC conditions provided a spectrum of greys ranging from bright white straight ahead, illuminated by the landing lights, to increasingly darker grey looking out either pilot's side window. Not taking anything for granted in a supposedly MARSA situation with another aircraft nearby, I continued to scan in front of us and to our right while the pilot continued his instrument departure climb.

All of a sudden the darker grey out the right side began to illuminate brighter and brighter in a sort of blanket uniformity, as if daytime had decided to abruptly return. My subconscious impression of this was that we were approaching some form of bright lights from the ground. It seemed similar to the visual effect of runway lighting environment approaching decision height prior to breaking out of the weather. I knew we were over the city, but we were climbing, weren't we? A split second scan of the instruments confirmed our pitch and bank to be normal.

Then it happened. That blanket of brightness became a beam of brightness, moving rapidly from 2 o'clock toward 1 o'clock and climbing through our flight path. Before that fact could barely register, the outline of a KC-135 emerged from the veil of clouds, well illuminated from its landing lights, position lights, even cockpit lights as well as our own landing lights now starting to reflect off its shiny new grey-green paint. The lights had offered a hint of warning. The actual presence visually of 175,000 pounds and 280 knots of mass and velocity momentarily preparing to occupy the same air space with us didn't afford me the slightest chance of slapping the pilot's arm, pointing, keying the interphone or comm radio switch or even yelling, "Look out." I grabbed the yoke from the pilot and abruptly pulled with both hands — full aft elevator to my lap.

With the abundance of airspeed and lightness of weight, the aircraft reacted immediately and responsively. It felt and seemed like we were passengers on a roller coaster as it started its high G ride from the bottom up. I was unsure if collision avoidance was possible at that point due to the closeness of the other aircraft upon recognition. I wasn't sure any evasive maneuver would work out, but it was the only option we had. For the fraction of a second during the pull, I was wondering what it would feel like, if anything, to broadside a like object at 280 knots and 3000 feet off the ground. In the ensuing 2½ G, 3500 foot vertical ride, I knew we had survived the broadside but did we possibly clip their tail or shave our wingtip? I must have held full aft elevator for 2-3 seconds although the pilot had to later describe to me how the ADI looked showing 30° nose high. I do remember how the angle of attack indicator looked floating above 1.0 (stall) and hovering around .9 for a long time as the yoke shook from the buffeting airplane. In a daze, I remember the pilot coming back on the controls, smoothly but quickly pushing the nose over in a near zero G environment. I stayed on the controls and assisted in regaining a flyable platform.

> **"Then it happened. That blanket of brightness became a beam of brightness moving rapidly from 2 o'clock toward 1 o'clock and climbing through our flight path."**

Departure control then requested us to hold down at 6000 block 7000. We were already there at the top of the block and then some. I have a cassette tape of the entire departure episode, compliments of ATC (RAPCON). Listening to my voice in the following transmission is an utterly priceless experience of sentiment. "Roger, sir, we just about had a midair with our number two guy — He's continuing northbound at this time and we're in a turn to . . ." I ended with "to" and had progressed from my contrived cool and calm voice to an out of breath mental "ram dump" when the blood pressure, anguish, shock and adrenalin finally had a chance to start circulating in my mind and body. The pilot had masterfully executed the near perfect recovery and once hearing the voice of the crewmembers in the other plane over interplane frequency, I decided the best thing to do at that moment was keep myself occupied as much as possible with pulling switches and valves, running the after-takeoff climb checklist and responding to radio calls.

Mention must be made here of what the other crewmembers were doing on the two aircraft during the collision avoidance maneuver. First of all, the other guys (two) — they missed out on all the fun. They made no attempt at an evasive maneuver and did not, in fact, see us until the last possible second. And only then, despite three sets of eyeballs searching for lead in the soup (IP was in the jump seat), did their pilot catch an instantaneous flash-like effect of our lights moving quickly from 10 o'clock low to 9 o'clock, out of sight. After blurting expletive comments cross-cockpit, their copilot craned his neck to 4 o'clock high to see the shooting star "acrobatic" KC-135 and yelling, cross cockpit, "That was lead."

Now for comic relief, let's examine the poor nav's and boom's experience on our aircraft. First of all, in discussions with each other later, four out of five of them said they were convinced they were gonna die. They didn't exactly know what was going on or what had happened, but they knew we were goners. The boom operator had just unfastened his safety belt and turned to walk back toward the galley when he found himself face down on the floor. When the instructor boom felt that same floor pulling at him from his cargo seat, he immediately unstrapped himself and ran back towards the parachutes. By now the floor gave way to a nearly weightless environment, which allowed him to glide the last 15 or 20 feet to the back, barely touching the floor until he got there. In no time flat he had a chute on. It had sounded to him during the pullup that we had indeed hit something. In fact, he had heard the sound of equipment in the back, tied down and otherwise, "jumping to the beat" one time. Knowing how close we were to the ground, he stood ready by the aft hatch to go, (better one than none). You can guess how much ribbing he later received when he came forward with only one parachute, strapped securely to his own body.

The navigators were a bit more docile in their stark terror. The primary nav related afterward to me the thoughts that went through his head as did the spare nav, who was experiencing one of his first flights since initial training at Castle. The staff instructor nav said bluntly and repeatedly during the remainder of the flight, "I'm never gonna fly with you guys again."

I don't claim for one moment that my experience of feeling pain and fear was unique to flyers, but I will say I've never been closer to death before and don't believe that I could have a closer call than that one and live to tell about it. I'm one of those pilots who has "yet to get sick in the air." Physically, I felt cold and mildly nauseous. My knees and hands were shaking. I really doubt whether my legs would have allowed me to stand on them for the first five minutes or so afterwards. The vision in my mind of that aircraft popping into view and coming into and across our flight path was photographic. For several days my sleep pattern was altered and the mere recall of it probably altered my stress level and blood pressure and still does when I think of it, months later.

How close did we come? Precisely how close we were from airframe to airframe at the closest point, no one will ever be able to measure. My cohort in the left seat, who saw it only during the evasive maneuver as they were going under us and by us to the left, said they passed probably within 200 feet. As I said earlier, I wasn't sure collision avoidance was even possible from their relative position and we didn't confirm a miss until some time later and after reestablishing communication with the other aircraft. That's too close!

Both aircraft landed at roughly the same time so the crews were able to debrief and discuss the incident while doing post mission paperwork. The IP on board the second aircraft said, "I saw it coming. I was looking out, straight ahead, expecting to see you pass in front of us." Their navigator had his radar on pencil beam, again looking electronically, straight ahead. But we weren't there. Their fan heading to the right had sealed their positions to the inside track, with all associated hazards, like rapid cutoff, bad spacing, bad timing, bad visibility (already in the weather), and being momentarily radio-out on MITO frequency while they analyzed the problem and selected manual frequency after becoming airborne.

"I grabbed the yoke from the pilot and abruptly pulled with both hands full aft elevator to my lap . . ."

To complicate things, departure control instructed the flight immediately after takeoff, upon establishing initial radio contact, to turn right, on course. Not knowing where two was and not wanting to make it too difficult for their maneuvering, lead requested to delay making the turn. We wound up flying runway heading roughly six to eight miles from the runway until turning. This allowed "Murphy" to perfectly position the two aircraft in the weather for an on speed, on altitude, dead ringer-perfect rejoin for what could have been a "sight and sound spectacular" over the city. What did departure control see or say about this? I spoke at great length with our controller afterwards, along with the supervisor of the facility. I also studied tapes and visited RAPCON on separate occasions. Their response was that although they were right there watching, we were MARSA, supposedly maintaining our own clearance, and it wasn't their job to intervene. And he's right. At what expense, though?

The picture should be clear by now. Count the ways it could have been avoided. Draw your own conclusions about who did what wrong, when, etc. It's always easier to do that while sitting back reading an article or a safety report or listening to someone else's "war story."

The interesting part of this is that although numerous mistakes and errors of judgment popped up throughout the story by numerous players, none of them were truly gross, blatant, or serious enough to stand out obviously in those periods of time when human rational thought could intervene and prevent what almost occurred. Instead, individuals kept to themselves the abnormalities they observed, thinking them to be too minor to be worthy of mention. That's all understandable. What they didn't foresee, however, was a "big picture" scenario starting to emerge and form a set of circumstances which perfectly jelled to almost spell "catastrophe."

We don't always have an abundant set of options available to get us out of holes. Nor do we have the required time to do so if we operate in the "press mode" — the "we'll handle any inflight problems once we get airborne and see what they are" attitudes. The options may not be there.

So this "war story" ends with the same moral as nearly all others. There's no substitute for adequate preparation and good crew coordination. Not all problems can be anticipated but those that are even minor abnormalities should be brought out and handled before they become big problems. Think conservatively. Remember, "Murphy's" out there waiting for you. If he can stack several little problems at you all at once, it has a multiplier effect and reduces your ability to safely react. Midair potentials have never been greater than they are today. You have the ultimate responsibility. Next time the outcome may be different . . . "if you could only see what I saw."

THERE I WAS

Capt Roberto J. Garcia
305 AREFW, Grissom AFB

Once upon a time (actually about six years ago), a crew was scheduled to fly a night anchor pattern with no GCI, in an area of the USA where Ponce de Leon believed there was a fountain of youth — Florida. The mission profile was rather simple: short nav leg, two sets of F-4's (61 and 71 leads), long nav leg, and finally, transition. Timing was of the normal importance, and being a member of the under 300 Club, did not give me worries since the rest of the crew was very experienced. Besides I had flown the same profile before so all that could be said was, "No problems."

All portions of the mission through the end of the first AR went smoothly and as planned. As the final chick (Fighter Jock Talk) of the first set of receivers was being topped off, 71 and flight checked on frequency and promptly made their presence known. A "standby" that would make anyone from command post be proud was issued, top off and offload report were completed and another satisfied customer departed.

Once the receivers were clear, a turn to the anchor point was initiated and all required crosschecks of information were accomplished, establishing 71 flight at 10NM out of the ARIP. Being 20NM inside the ARIP, I requested the receivers fly a 360 upon reaching the ARIP. A firm "Roger, lock on 20NM, IP at this time, starting 360" was the response received.

The call was acknowledged; our turn towards the anchor point was already completed and we were well established on our heading towards the anchor point when the call, "Tanker, 71 in turn, lock-on 15NM," came through.

At this particular time, my air sense warning horn went off. It was hard to understand how an aircraft in a turn was catching up to an aircraft heading away from it, especially when we were flying just about the same speed.

"71, continue turn do another 360" was my solution to the problem.

Immediately following came: "Roger, copy another 360, 10NM, we have visual, are we cleared up?"

Now my brains started to become unglued and in the most puzzled and hesitant voice possible I issued a: "Negative, continue turn."

Not really knowing what was going on, and as confused as I was, my pilot said: "It's okay, nav, clear them up."

All I could mutter was: "AC, it doesn't feel right."

In a very confident voice attained from experience and aircraft commander's pay, my pilot reassured me by saying: "Don't worry, nav, it's okay."

This is where all the fun began. I quickly called 71 and cleared them up, to which a rather satisfied voice announced that they were "cleared up and five miles in trail." Shortly a "Nav, boom, I don't see them, could you have lead flash his lights?" was heard.

Not about to start an argument, and still trying to piece my brains together, I echoed the request.

71 acknowledged and complied as he stated: "Flashing lights, 2NM in trail."

My feelings of emptiness were set aside when the boom repeated his request. I called 71 and stated: "Negative visual, flash your lights" which was quickly followed by "Flashing lights, one and one-half NM in trail, the boom's got to see us now."

"Nav, boom, I still can't see them."

Looking back at it, even now I can feel the same silence that seems to be eternal, a silence that was finally broken by a: "*@#!, this guy doesn't have a boom."

Now I can tell you how one dark night a set of F-4's attempted aerial refueling with an airliner.

With all of that out of the way, and with sanity and the "I told you so" attitude very much present, the receivers were sent back to the ARIP and the rest of the mission went as planned. Upon reaching the deaf walls of the debriefing room, all presumptions and finger pointing were set aside. By the magic of reenactment, understanding and embarrassment (closely followed by laughter) were attained. All that happened was that I knew what I was doing, but my pilot didn't know what I was doing and didn't think I knew either, so he trusted the experienced F-4 crews. My inexperience then allowed my pilot's authority as aircraft commander to override my decisions on how I wanted to run the rendezvous. What made things worse was asking a receiver with lights on his landing gear to flash his lights while his gear is up.

The best lesson I learned was that common sense, supplemented by knowledge of technical orders and regulations governing air refueling, would have precluded my having to write about such a memorable flight.

NAVS SAVE PLANES TOO

. . . also boomers, gunners, EWOs, crew chiefs, radio operators, loadmasters, flight engineers, etc. etc.

Capt Edward M. Sachs
55 SRW, Offutt AFB

Flying safety has taken on new perspective with the public's preoccupation and concern about nuclear catastrophe. This heightened awareness stems from several sources including:

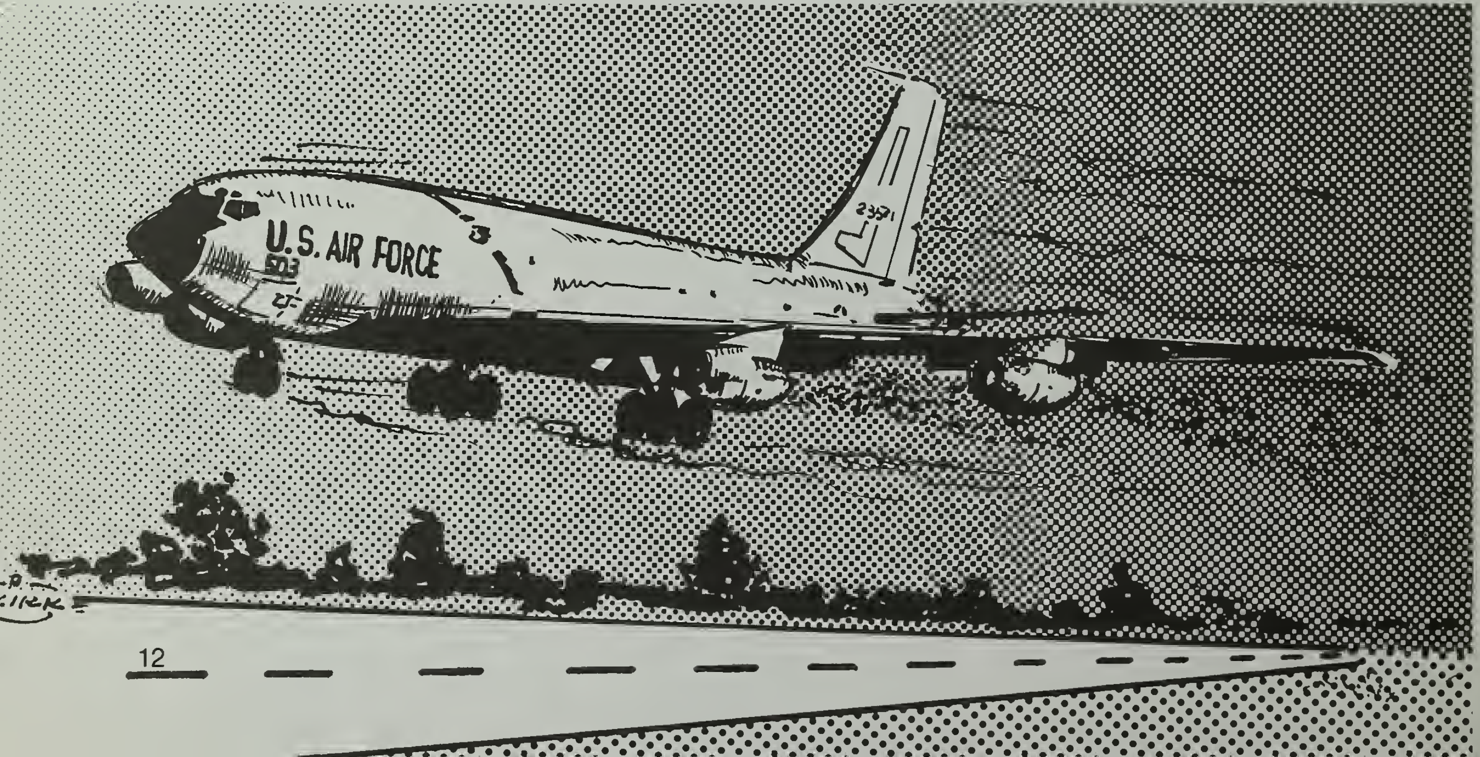
- Media coverage of the arms race, weapons expenditures, terrorism, bomber crashes, the presidential campaign issues and debates.
- Movie presentations such as: War Games, The Day After, Countdown to Looking Glas, and Special Bulletin.
- Popularly available books including: WWIII, SIOP, Warday and the Survivalist series.

The new public and media awareness means that anytime a SAC aircraft suffers a major mishap one can expect outcries about nuclear tragedy and misuse which (as was the case in the Damascus Titan incident) raise controversies which could affect our mission. The acquisition and funding of newer aircraft (which might have lower material factor mishap potential) is out of the hands of crewdogs to control. Where crewmembers have an input to help keep the accident rate down is in the human factors area.

Along this vein, I recently commented to a nonflyer friend that "pilot error was an increasing cause for aircraft accidents." The response I got was, "If that is the case, let the navigators do the flying." Regardless of how uninformed this response may seem, it made me think that navigators and other cockpit crewmembers should be better utilized and encouraged to help prevent aircraft incidents.

We have all read and heard stories about the "guy in back, who, although not a pilot, saved the aircraft when the pilot was unable to fly due to a birdstrike complicated by medical and mechanical factors." There are other ways to save an aircraft without actually grabbing the stick. In an incident I was involved in a few years ago, a -135 crew was flying around the Midwest. The pilot was preoccupied and the copilot was completing the engine monitoring form. It was the navigator who heard the call from center ordering an immediate descent. The navigator passed the word to the pilot who pushed the nose down. Had this action taken place three seconds later, the -135 would have been an unwelcome addition to an F-4 four-ship formation and would have wiped out much of the Air National Guard of one of our least populated states.

That was one example of how someone other than a pilot can save an aircraft. This type of "heads up" action should be encouraged. Nonrecognition of actions like this (besides ruining the morale of navigators and boom operators) is dangerous because it can cause complacency among nonpilot crewmembers. If nonpilots feel impotent in preventing aircraft accidents, or getting recognition for same, they may stop "participating" in air-



craft safety. Returning to the above incident, I'm sure the aircrew, passengers and dependents of that -135 were glad the navigator was around.

In a similar situation described in a recent safety periodical, a crew was preparing to land and had already been in the cockpit for the maximum crew duty day. Although they had legal crew rest, because of their "O' Dark Thirty" wake up, and severe recovery weather (which had lengthened their mission and necessitated two on load air refuelings) they were fatigued. In this instance, a boom operator had sat down in the jump seat and was the only crewmember who spotted a small aircraft and helped avoid a midair collision.

A way in which navigators daily save aircraft is by keeping them out of controlled airspace. A crew from my unit was flying in Middle East airspace when a controller from a "questionably aligned" country put the aircraft on a vector and forgot about it. The navigator realized the aircraft was heading toward actively hostile airspace and made a heading change. The controller never came back on the radio.

Additional crewmembers also provide extra sets of eyes to watch for other planes and weather. They provide hands to reset switches and circuit brakers (above and beyond their normal crew position) thus allowing the pilots to concentrate on flying the aircraft. They provide mouths to communicate messages inside and outside the aircraft; they have ears to hear important calls.

Safe crews are ones which are well coordinated, observe each other, pace or preplan events, and have a good division of labor.

Items which nonpilots can do personally or remind pilots to do well in advance are:

1. Get the approach briefing out of the way well before IAF.
2. Inform center early of intentions in the traffic pattern.
3. Get end air refueling clearances early.
4. Precompute traffic pattern transition speeds early.
5. Check C.G. and weather/ATIS early.
6. Perform calls to center, command post, or weather for pilots before critical phases of flight — particularly helpful if information is lengthy like changing flight plans, missions or multiple alternate landing base weather forecasts.
7. Monitor approaches, particularly altitudes, air speed, drift and clearing other aircraft.
8. Keep crews from falling asleep or getting complacent on long duration missions.
9. Record clearances, vectors, altitudes, routing, frequencies, weather warnings and important notices so pilots can keep their hands free.
10. Know how to monitor performance and engine gauges and proper switch settings so you can warn pilots of something wrong which they may be too busy to see.
11. Read bold print to allow pilots to concentrate on emergencies.
12. On the ground, help monitor ground equipment and wingtip clearance.

In general, the additional crewmembers should help prevent small distractions and problems from snowballing into large problems.

If additional crewmembers are effectively used, they may be able to reduce mishap rates. Many airlines seem to agree with this statement as they prefer to continue to use aircraft with three (or more) person crews, even though this increases their operating expenses. A quick glance at USAF statistics shows that single and dual crewmember aircraft have a much higher mishap rate than multicrewed aircraft. It might be difficult to prove, but perhaps many of the military pilots and aircraft lost through the years could have been saved if there had been someone providing an extra set of eyes, ears or hands on board, regardless of what their job title was.

The point to remember is that each time a plane is lost, the press, public, adversaries, budget cutters, and disarmament advocates are watching. If, however, aircraft commanders encourage additional crewmembers to do more watching (and coordinating), fewer planes might be lost.

One final note of caution: everything must be done in moderation. Somewhere, at some base, some pilot will feel he can fly safer if his arm is not as tired from carrying his A-3 bag. This article is not intended to encourage pilots to delegate that specific task. *Navigators carry enough baggage already!*

Can you identify this aircraft?
Answer will be published next month.

It will soon be time for the best missileers from each of SAC's eight strategic missile wings to converge upon Vandenberg AFB for the annual SAC Missile Combat Competition. This year marks the 18th for this prestigious event. The weeklong competition showcases top competitor teams vying for the distinction of the "Best of the Best" in five categories: operations, maintenance, communications, security police, and civil engineering. For seven days, all attention is focused on the competitors and the results of their exercises. The top overall winner will earn the coveted Blanchard Trophy and with it the rights to the boast, "Best missile wing in SAC."

Col Richard P. Jaques, commander, 3901 SMES, has been designated as the competition commander. Already deeply involved in all phases of preparation, he will continue to monitor and direct activities throughout the competition to ensure all competitors receive an absolutely fair evaluation that accurately reflects their performance and proficiency. During the opening ceremony, Col Jaques will invite each wing commander to draw a sealed envelope from the Blanchard Trophy. The results of this drawing will determine each wing's exercise schedule.

For the competitors from each missile unit, this competition will culminate months of study, exhaustive training, and diligent preparation. Yet, behind the scenes, out of the spotlight, is another group of "competitors" who are also working long and hard hours readying the arena for the competition. Without the preparation and efforts of 4315th CCTS and 3901st SMES personnel, the competitors would not have the opportunity to "show their stuff."

The 4315 CCTS temporarily shifts from its primary training mission and focuses upon supporting the competition. Its day to day unique mission — training SAC's prospective missile combat crewmembers — makes them ideally suited to play a key role in the operations phase of the competition. Up to a full year before the competition, 4315 CCTS personnel coordinate with HQ SAC and AFMPC to structure the initial qualification training schedule to ensure the missile procedures trainers (MPTSs) are available for competition use. Each of the 11 MPTs (four Command Data Buffer; two Minuteman II Command Data Buffer; two Improved Launch Control System; two Minuteman Modernized and one Titan II) will get its fair share of workout by the competing missile combat crews during the operations exercises. Even with the competition still months away, maintenance technicians of the 4315 CCTS are dedicating their efforts toward bringing the trainers to peak operating condition for the big event.

Well into high gear, also, are the missile crew evaluators of the 3901 SMES. Individuals from each of the separate weapon system sections are designing and coordinating among themselves the "challenging" competition exercises which will provide the fair and

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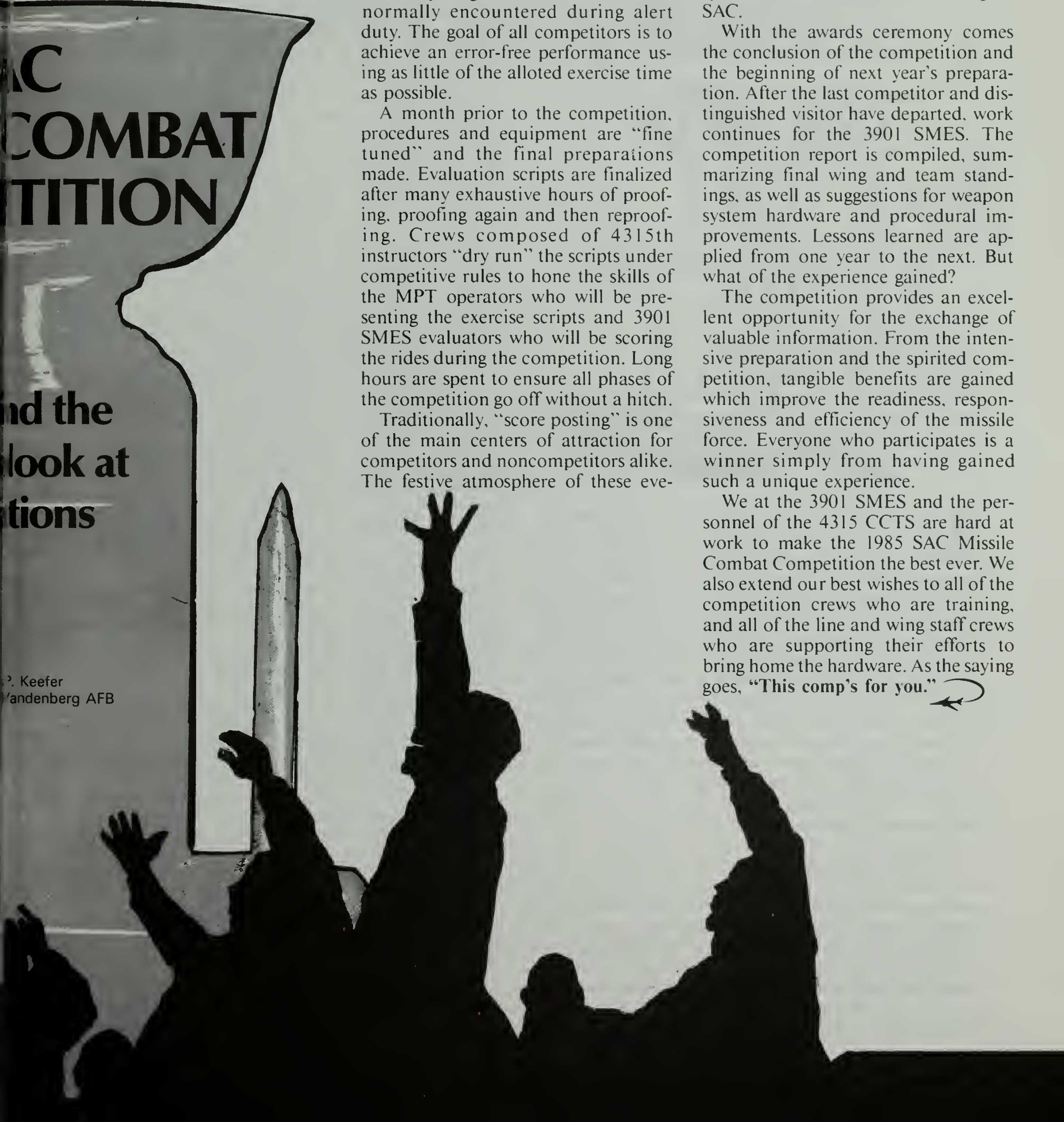


equitable test of all competitors. Each script in essence will be a total test of the combat crew's knowledge, proficiency, coordination and resourcefulness in recognizing and solving a vast array of both weapon system and Emergency War Order problems. The exercises are designed to challenge even the most skilled competitor and expose the competing crews to situations not normally encountered during alert duty. The goal of all competitors is to achieve an error-free performance using as little of the alloted exercise time as possible.

A month prior to the competition, procedures and equipment are "fine tuned" and the final preparations made. Evaluation scripts are finalized after many exhaustive hours of proofing, proofing again and then reproofing. Crews composed of 4315th instructors "dry run" the scripts under competitive rules to hone the skills of the MPT operators who will be presenting the exercise scripts and 3901 SMES evaluators who will be scoring the rides during the competition. Long hours are spent to ensure all phases of the competition go off without a hitch.

Traditionally, "score posting" is one of the main centers of attraction for competitors and noncompetitors alike. The festive atmosphere of these evenings definitely enhances **esprit de corps** throughout the missile force. The excitement steadily builds for two nights of scoreposting and reaches a climax during the third night of posting when all winners are announced. Individual and unit awards are presented in all categories, culminating with the awarding of the Blanchard Trophy — symbolic of the best missile wing in SAC.

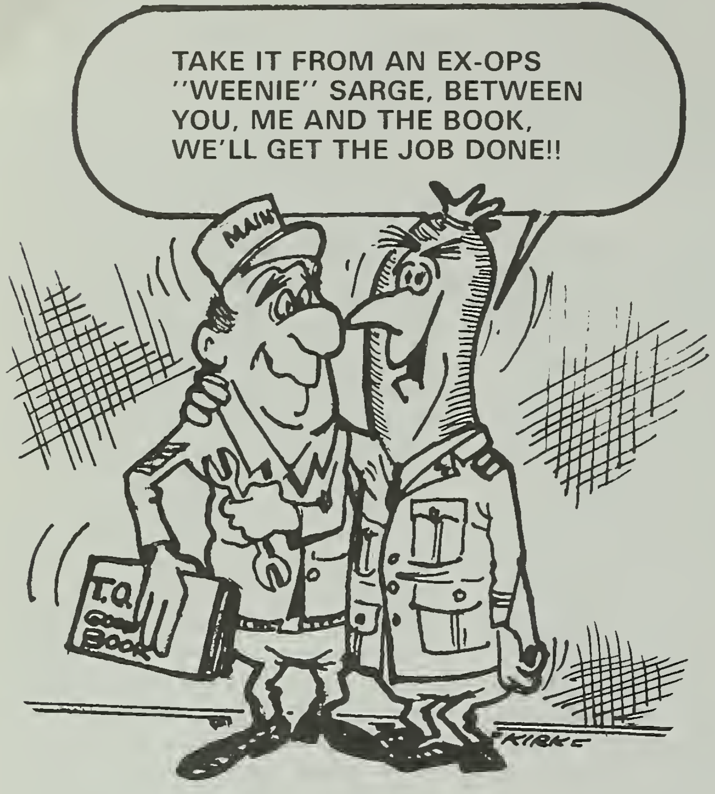
With the awards ceremony comes the conclusion of the competition and the beginning of next year's preparation. After the last competitor and distinguished visitor have departed, work continues for the 3901 SMES. The competition report is compiled, summarizing final wing and team standings, as well as suggestions for weapon system hardware and procedural improvements. Lessons learned are applied from one year to the next. But what of the experience gained?

The competition provides an excellent opportunity for the exchange of valuable information. From the intensive preparation and the spirited competition, tangible benefits are gained which improve the readiness, responsiveness and efficiency of the missile force. Everyone who participates is a winner simply from having gained such a unique experience.

We at the 3901 SMES and the personnel of the 4315 CCTS are hard at work to make the 1985 SAC Missile Combat Competition the best ever. We also extend our best wishes to all of the competition crews who are training, and all of the line and wing staff crews who are supporting their efforts to bring home the hardware. As the saying goes, **"This comp's for you."**

How Does An Ex-ops Weeenie Like Maintenance?

Capt Charles G. Carpenter
231 SMW, Grand Forks AFB


TAKE IT FROM AN EX-OPS "WEENIE" SARGE, BETWEEN YOU, ME AND THE BOOK, WE'LL GET THE JOB DONE!!
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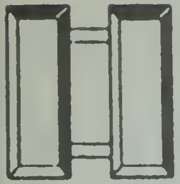
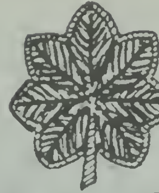
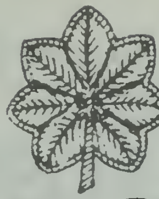
After spending seven good years of my life in the operations side of the house, I decided it was time to try the other side of the street — maintenance. I procrastinated for several months and almost called MPC a hundred times before I actually got the courage to do it. After all, nobody was beating down the door offering me a CINC's job and I was comfortable as an instructor at Vandenberg AFB, so it took time to make up my mind. In this brief article, I will summarize my feelings and impressions about working in missile maintenance. In doing so, I will discuss the areas which I feel best distinguish operations from maintenance: the opportunity to work with enlisted people, management versus leadership, and responsibility. Bear in mind, I have been in maintenance for a mere six months and still have a lot to learn, but for now, I feel the move was a good one.

One of the most challenging and important parts of the job is the opportunity to work with the enlisted members of the Air Force. In operations, you know the squadron administrative clerk and perhaps some of the enlisted people out on site, but for the most part, the enlisted folks are just someone at the other end of a telephone. You never get the opportunity to know, supervise, or lead them as they try to keep the missiles "in the green." In maintenance you learn quickly that people are your most valued asset. Their problems better be your problems, and your solutions to those problems better be good ones. Moreover, it becomes apparent that textbook management styles usually just make good reading and that you must be flexible enough in your style to cope with many different personalities, which leads to my second point.

In maintenance, you learn, rather quickly, the difference between management and leadership. In operations, you are primarily a manager. You are concerned with things — LFs, LCFs, T.O.s, forms, etc. You are afforded very few opportunities to practice the art of leadership. In maintenance, you are in equal measure a manager and a leader. On the one hand, you must insure the "things" people need to do the job are available and accessible. On the other hand, you must be the leader of the troops. You set the standards and provide the motivation required to ensure the people use the "things" you provided as a manager to get the mission accomplished. In my opinion, those officers who are not successful in maintenance fail because they do not recognize this distinction. They attempt to substitute management when leadership is required because management is easier than leadership. This is really the core of what sets maintenance apart from operations — the nature of the responsibility which is exercised by maintenance officers. Granted, the responsibilities of a crewmember are enormous, but the two are very different. The maintenance officer is placed in charge and expected to produce results from the actions of others. He does not succeed by taking standboards or monthly war order testing; his success or failure is measured by the success or failure of his people. In short, the maintenance officer's fate is determined by how well he handles the leadership role. This point is vital and tends to scare an "old ops guy" who is used to controlling his own fate.

In conclusion, I can unequivocally state that the move from operations to maintenance is a good one. It broadens one's perception of what the missile business is all about. It helps mid level captains develop their management style while, at the same time, gives them the opportunity to become leaders. As we all know, a demand exists in today's Air Force for good leaders, at all levels. Maintenance also provides unique challenges and responsibilities that even the most important "ops" job cannot. Finally, it provides the opportunity to work with the "backbone of the Air Force" — the enlisted force. Would I recommend it? Yes. Come on in, the water's fine.

Capt Carpenter is OIC of the 321 FMMS vehicle and equipment control branch. He was previously a crewmember at Grand Forks AFB as well as an instructor in the 4315 CCTS.

AN OUTSTANDING OPPORTUNITY

Capt Bruce S. Wong
4017 CCTS, Castle AFB

Those words left me in a daze as I sensed my career taking a dive. The below the zone promotion, Air Staff assignment and promising career I was hoping for had just been blown to pieces by MPC with the words "an outstanding opportunity" and "you have been recognized as SAC's finest and selected for CCTS instructor duty." Well, they were not going to fool me. I had sat in on the rumor control boards with all the old heads, knew "all the facts" about Castle AFB, and resolved myself to three or more miserable years of drudgery with no possible means of advancement. Well, I've now seen a new light. For all you instructor types that are, or will soon be, coming this way, I bring you fact and not fiction. Specifically, the purpose of this article is to provide you, the instructor, with several facts about an assignment to Castle AFB.

Rumor No. 1: Castle is in the middle of nowhere with nothing to do.

Fact No. 1: The opportunities for travel, entertainment, skiing or whatever are outstanding. Since Castle is within easy access of San Francisco, Sacramento, the Napa Valley, Reno, Tahoe, Monterey, etc., you will be hard pressed to visit all the attractions available during your stay. Furthermore, I believe that Castle's Recreation Center is the only one to organize regular junkets to Hawaii, Reno, Lake Tahoe and Mexico. Finally, you northern types just might appreciate the abundance of sun and warmth.

Rumor No. 2: I'll be stuck there forever in the same job.

Fact No. 2: Your stay at Castle will normally be a three to four year tour beginning with an assignment to the 328th Bomb Squadron or the 93d ARS as a line instructor. From here, your opportunity to expand your career is limited only by personal desires and abilities. Organizations such as the 4017th CCTS, CFIC, STAN/EVAL, Training Devices Division (WST) and staff agencies within the headquarters provide excellent career expansion and staff background. Also, a new aspect of flying called "Holidays-off" will be a nice addition to your schedule.

Rumor No. 3: OERs at Castle are indorsed by the flight commander.

Fact No. 3: You will find SAC's finest instructors at Castle doing an outstanding job and receiving their deserved rewards. Moreover, it appears that Castle is a leader within the command for off base indorsements. Let's face it, due to the diversification of duties and responsibilities, SAC has recognized that the success of the future crew force will be determined by the quality of the Castle instructor. A word of warning though, the OER is representative of your performance. If you "slug" it out, your indorser will adequately reflect it. The opportunities are here. "Join the team and prosper."

Rumor No. 4: Nobody gets promoted at Castle.

Fact No. 4: Have I got some good news for you dynamic captains. It appears that Castle is a front competitor for promotions. Statistics reveal that 88% of the Castle primary zone eligibles were promoted to major on the 1984 board. Furthermore, this rate bettered both SAC's and Air Force's. It might not be a bad career move to associate yourself with this elite group of professionals.

Rumor No. 5: Nobody looks at Castle for higher headquarters assignments.

Fact No. 5: Contrary to some rumor control, our follow-on assignments to service schools, SAC Headquarters and the Air Staff are outstanding. Furthermore, it appears that SAC and MPC give special consideration to the Castle instructor during the reassignment process. Realistically, these positions are filled by individuals who have proven themselves to SAC and the Air Force. Moreover, they are filled by the "experts" in the field and a majority of these people pass through Castle AFB. For example, the following assignments were recently offered to Castle's instructor corps: 8th AF, 15th AF, HQ SAC, Air Staff, the Canadian Exchange Program, Maintenance Squadron Commander, SAC Coordinator Rapid Deployment Force, Squadron Operations Officer, USAFA faculty, JSTPS, Deputy Director NAVSTAR, Strategic Systems SPO, Squadron Commander, Nellis/SAC Liaison Officer, 4200 Test and Evaluation Squadron, SAC B-1B, Air Command and Staff and 1st CEVG. How does this list compare to those at your unit?

An outstanding opportunity? You bet. For those of you interested in a challenging tour of duty in an outstanding location with ample opportunity for promotion and super follow-on assignments, I suggest that you strongly consider Castle AFB. You will meet and work with the finest instructors in SAC and leave your mark on many individuals for many years to come.

CROSS CHECK IFC

AFM 51-37 CHANGE 3, I.C.A.O.

THE SIFC STAFF

In last month's article we briefly mentioned the addition of ICAO procedures in change 3. This month, we will explain why the ICAO section had to be added and then go over some of the more important points of ICAO course reversals.

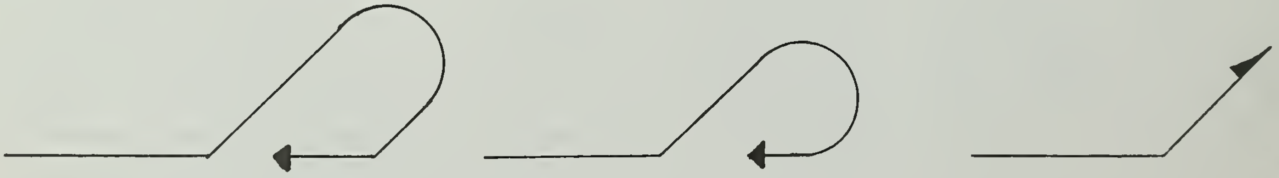
Paragraph 6-13.1 had to be added because of changes in the way other countries may design instrument approaches. (You old heads probably remember that our Cross Check article for October, 1983 covered operations in ICAO airspace, pending incorporation into AFM 51-37.) In airspace under FAA jurisdiction, instrument approach procedures are designed IAW AFM 55-9 (a joint use manual more commonly known as TERPS). As would be expected, all procedures addressed in 51-37 were predicated on obstacle and airspace requirements outlined in TERPS. Many other countries, however, design their approaches using criteria established by ICAO and published in an ICAO publication called Procedures for Air Navigational Services, Operations (PANS OPS).

In the past, PANS OPS and TERPS design criteria were closely enough aligned so that one set of flight procedures was sufficient. However, in 1983 there was a significant revision to PANS OPS that, under certain circumstances, effect both obstacle and airspace design criteria. Under the new standard, flight procedures predicated on TERPS may not guarantee you protected airspace. Paragraph 6-13.1 provides us with the necessary guidance to properly execute approaches designed under the revised ICAO criteria.

The first paragraph tells us these procedures "apply only in airspace not under FAA control." The obvious question is, "what is or is not FAA controlled airspace?" Until further guidance is received, FAA controlled airspace is essentially the 50 states, the Honolulu FIR, American Samoa, Puerto Rico, and the U.S. Virgin Islands. So, anytime you are operating outside these areas, you should fly ICAO procedures. That should be pretty simple for now, but look for some changes to that in the future.

The second sub-section describes how ICAO procedures will be depicted. The examples are straight forward; however, the procedure turn depictions can be confusing. The reason is because of a slight problem in how the procedures were/are depicted in the IAP books. In the past, regardless of who designed the procedure, all IAPs appearing in DOD IAP booklets depicted procedure turns by the familiar barb (TERPS symbol for a procedure turn). This was not necessarily the way the approach was depicted when originally charted by the host nation. Although action is being taken to correctly depict approaches, expect to find procedure turns in either the ICAO depiction or as a barb (fig. 1). Figure 2 shows an approach as it appeared two years ago and figure 2 shows the same approach as it now appears. Until further guidance is received, assume that IAPs in areas outside FAA controlled airspace were designed using revised ICAO criteria, and fly them using 45/180 procedures. The 80/260 maneuvers are correctly depicted and seem to be found only in the Pacific, Australia, and Antarctica terminal books.

ICAO 45/180 PROCEDURE TURNS MAY BE DEPICTED IN ONE OF THREE WAYS
FIGURE 1



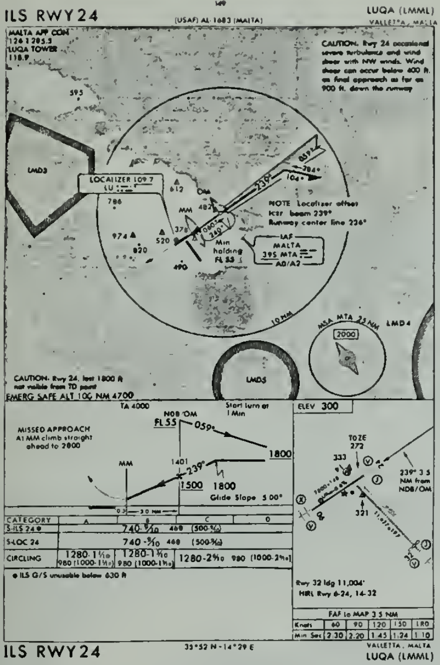


FIGURE 2

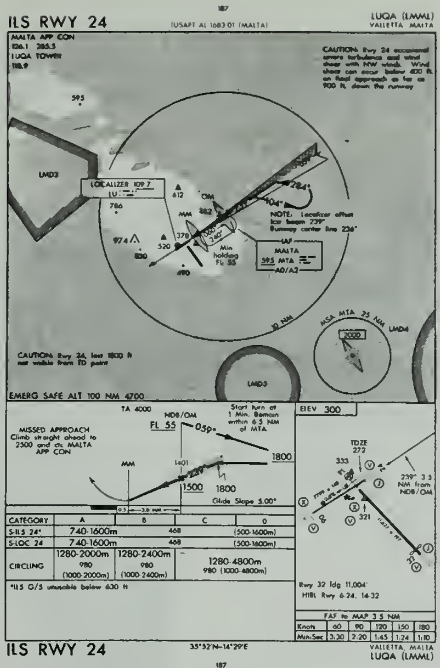


FIGURE 3

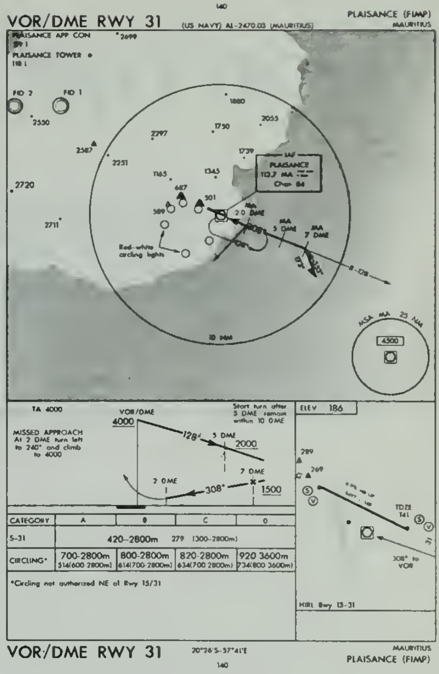


FIGURE 4

Entry procedures are explained in detail, but the 30 degree entry sector requirements for procedure turns and base turns can be easily overlooked or forgotten. It is extremely important for you to remember the restrictions. The major change to PANS OPS was the inclusion of the 30 degree entry segment. That is what made our 'normal' holding entry procedures for flying procedure turns incompatible with ICAO. The 30 degree entry segment allows more flexibility in approach design where there is limited airspace available. When approaching a facility for an approach outside of the entry sector, you must request maneuvering airspace to align the aircraft in the entry sector. For example, if you are approaching Plaisance, Mauritius (Fig. 4) from the east you would have to request maneuvering to align the aircraft on a heading between 098 and 158 degrees.

The expanded entry sector for base turns and entry procedures for the racetrack procedure are pretty much self explanatory and shouldn't present any major problems. There is a little blurb on what to do when established in an arrival holding pattern, however, there are no examples shown. The approach at Valletta (fig. 3, above) is an example of an arrival holding pattern that will align you within the entry segment to start the approach. Note the inbound holding course is closely aligned with the outbound procedure turn course. The approach at Plaisance (fig. 4, above) is an example of an arrival holding pattern that will not align you for the approach. If established in this type of holding pattern, you have two choices when cleared for the approach. Either request maneuvering for alignment, i.e., "request to maneuver southwest of Plaisance within 4NM for alignment", or request to shoot the approach from the holding pattern, i.e., "request to extend the holding pattern to 3 minutes* and execute a straight-in approach from holding".

The procedures for flying the four ICAO course reversals are explained in detail and are straight forward. Unfortunately, little light is shed on how to compute the distance required to perform ICAO procedure turns. The first thing you must know is how much airspace it takes to accomplish a 45/180 or 80/260 procedure turn. A 'quick and dirty' little formula you might want to remember is:

> for a 45/180 procedure turn, the distance required for the maneuver is 3 times the aircraft turn radius plus 1 mile. For a 80/260 the airspace required would be 3 times your turn radius.

P.S. For those of you who forgot, aircraft turn radius is Mach −2.

Using the approach at Plaisance (fig. 4), if your airspeed will be 180 knots, you would have to start the turn no later than 6 DME from Plaisance VOR/DME, no wind.

That completed our 'walk through' and we hope that at least some of the 'muddy' areas might be clearer. If you have any questions or don't understand something, ask one of your SIFC graduates or give us a call at Autovon 347-4571. If you can find a copy of the October, 1983 issue of Combat Crew, you might want to read the Cross Check article on ICAO approach procedures. Expect to see more guidance in the future and operation at fields where procedure turns are depicted by the barb. **Happy flying**

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* For this approach the FAF is 7 DME. To execute the approach from holding it would be necessary to proceed outbound in holding more than one minute. Each approach would have to be evaluated to determine the length of holding pattern necessary to execute the approach.

“Don’t get goosed by a giggling gaggl

1Lt Timothy J. Will
Tyndall AFB

WATCH OUT! Those familiar feathered friends frequenting the flyways fancy your fan blades! (and canopy too!)

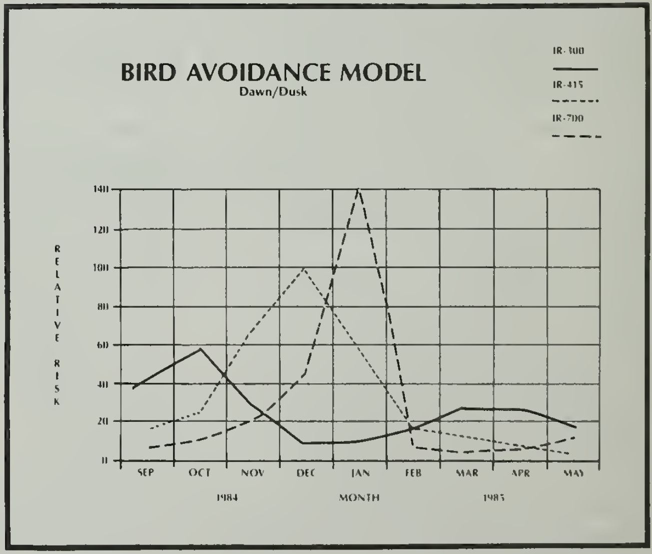
Today’s high-speed, low-level flying mission makes birds of all sizes a threat to aircraft. And while low-level flying accounts for about a quarter of the total Air Force tally of bird strikes, roughly one half of all recorded strikes actually occur in the airdrome environment. These figures are a great concern to us on the Bird/Aircraft Strike Hazard (BASH) Team because of the cost in damage, injury and occasionally the loss of the entire kit and caboodle (that means plane, pilot, crew, cargo . . . **EVERYTHING**). In 1984, for instance, Air Force bird strike costs topped $19 million, including over 2,600 reported strikes with one Class A and three Class B mishaps. That figure doesn’t take into account the dollars lost due to aborted missions.

The bottom line is that flyers need to be aware of the bird hazard that faces them every time they’re in the air. If you’re on the runway preparing for departure, listen up for tower warnings of heavy bird activity. If you see birds on the airfield, let someone know. While cruising the skies, use good midair-collison-avoidance techniques. After all, aren’t birds simply another type of airborne threat? Many a pilot has been alert enough to avoid a four-pound “buzzard-bomb” and save himself some grief (and paperwork).

One particular threat pilots face is migratory birds, particularly waterfowl, because of their size and weight. It is important for all to be aware of the general types of birds frequenting air bases, as well as migratory routes during spring and fall. The heaviest periods in the spring are from March through April, and in the fall from September through November. Large flocks of waterfowl are very capable of bringing down your plane — not for a three-point landing either!

One good source of information on the migratory birds in your area is your local fish and wildlife department. Whether state or federal, they will be up on some good facts that might help you fly another day. Be sure to ask them what kinds of birds frequent regions you fly over, and where they make their winter vacation spots. They can help you pick out local migratory pathways, and tell you if birds have any known feeding areas. In some cases, they can even get with the folks up north and give you a heads-up on when birds should get to your areas.

The pilot of this F-18 was lucky. He was zipping along at 420 knots, 550 feet AGL, when a turkey vulture penetrated the windscreen, struck the pilot’s helmet and ripped the canopy. Suffering facial cuts and glass particles in his eyes the pilot slowed the Hornet to 240 knots for a 20-mile straight-in landing. The pilot said he never considered ejection.



# of gawky geese!”

What are some birds to watch for? Like I've said, flocking birds such as ducks, geese and swans can ruin your day. And vultures, hawks, gulls, starlings and black birds can really mean business when they get in the way of that equipment you've strapped on. Ducks, for instance, are just a "wee-bit" gregarious during migration: It's estimated that as many as 15,000,000 of them fly through the Mississippi Valley; 3,000,000 through the Atlantic coastal states; and roughly 6,000,000 through the central valley of California. Now, the BASH Team understands that those big numbers might have some of you a little concerned — and rightly so. That's why we've developed the Bird Avoidance Model (BAM) to aid in determining which routes are less risky to fly. The BAM can take up to eight routes at a time and compare them by time of day as to their relative risk due to waterfowl for any published low-level route in the CONUS. It can also be fed with geographic coordinates for any proposed route or for a low-level range area within the CONUS. The end product is a set of three graphs which are used to assess the desired route/area to fly—when given a choice. (See illustration) In addition to waterfowl, we are in the process of adding raptors (hawks, owls, etc.) to the model. This phase of the BAM should be available for fall 1985.

If the above information hasn't whetted your appetite enough to know more about bird hazards to aircraft, then perhaps you haven't seen our latest movie. Yes, that's right, we care so much about you guys that fly, we've even put "the word" on celluloid. If your local safety guy doesn't have a copy yet (and he should), then tell him to get on the horn and we'll tell him how to get one. It's called "Dangerous Encounter," and if you watch carefully you should get a few laughs, as well as a pretty good message on bird strikes.

Be sure to let us know if we can help you reduce bird hazards. Call us at Autovon 970-6243. The BASH Team is available, on request, to give local assistance with base bird problems. One way you can help us is to be sure to report **all** damaging and non-damaging strikes to your wing safety office. Your reports have helped supply needed information to help design stronger, bird-resistant aircraft, as well as to provide support for moving landfills and sewage ponds which attract birds.

One final note: You don't **have** to be another bird strike statistic. Besides, the fast-food joints have enough "pieces-parts" of birds to last until the next century. Don't fool yourself into thinking birds are an unavoidable problem—**WATCH OUT!**

PROFESSIO

Aircraft Maintenance

SSgt Thomas C. Stretch, 319 BMW, Grand Forks AFB, is SAC's Maintenance Airman of the Month. Sgt Stretch's outstanding abilities as a B-52G crew chief are clearly apparent in his day to day performance. His aggressive pursuit of excellence has led to an outstanding low aircraft delayed discrepancy rate. In March of last year, Sgt Stretch's aircraft flew 116.1 hours and accounted for one-sixth of his wing's total flying hours. Ever vigilant in improving his job knowledge and efficiency, Sgt Stretch initiated an AFTO Form 22 to delete use of asbestos gloves for engine starter cartridge removal; his change was adopted without question. He has since initiated AFTO Form 22s on starter cartridge installation and the correction of procedures for draining full sumps on B-52's. He is constantly looking for ways to improve the quality and safety of SAC's maintenance effort.

The professionalism displayed by Sgt Stretch is manifested by his impressive record of zero defects on followup inspections and over the shoulder evaluations by both his superiors and the Quality Assurance Division. His outstanding performance was the prime element in his being selected as the crew chief to represent the 319 BMW in the 1984 SAC Combat Weapons Loading Competition.

Missile Maintenance

TSgt Charles A. Mitchell, 381 SMW, McConnell AFB, is SAC's ICBM Maintenance Airman of the Month.

Assigned to the quality assurance division, Sgt Mitchell trained the missile handling teams for the 1983 and 1984 SAC Missile Combat Competition. His teams earned over 90% of the available points and in 1983 contributed significantly to the 381 SMW winning the Blanchard Trophy. In the 1984 competition, Sgt Mitchell's new maintenance procedures on the TITAN II missile trailer shock struts were successfully evaluated and tested. These procedures are now in use for the TITAN II deactivation. Also in use in all TITAN II operations are Sgt Mitchell's changes to the tech data for the operation of the TITAN II rocket engine test set. His expertise is widely recognized — he was recently selected to augment the 3901 Strategic Missile Evaluation Squadron.

Sgt Mitchell has established an exceptional evaluation record and has earned the ICBM Master Team Chief and Master Evaluator awards. His consistently superior performance has contributed to the success of the 381 SMW and the strategic deterrence capability of SAC.

NAL PERFORMERS

Missile Crew

The 351 SMW, Crew R-147, Capt Michael L. Nunnally, MCCC, and 2Lt Glenn E. Robinson, DMCCC, is SAC's Missile Crew of the Month.

Crew R-147 was on alert at India One LCC during the squadron code change operation. The crew was monitoring extremely heavy maintenance at several launch facilities when they were suddenly confronted by incorrect alert status at one of their facilities. The launcher status missile indicator panel showed one sortie with erroneous critical status. Without hesitation, the crew immediately processed the inhibit/anti-jam procedure, thus quickly eliminating the false indications and properly returning the site to the required strategic alert state. At this point, the crew reasoned that exiting the anti-jam mode was necessary, and, after close coordination with wing command post and wing job control, directed the squadron procedures for termination of the operation.

On a subsequent alert, the crew was plagued with severe weather in the flight area along with related electrical power stability problems. Suddenly the crew noticed smoke and the smell of fire coming out of the equipment racks. Realizing that a life threatening situation existed, the crew implemented the proper checklists.

Since these fires severely degraded squadron EWO and weapon system capabilities, Crew R-147 determined a need to transfer their timeslot and realign both the squadron EWO and communications monitoring responsibilities. Eventually Capt Nunnally and Lt Robinson also performed LCF processor shutdown allowing a technical engineering team to determine the cause of the multiple fires. It was this display of outstanding weapon system and EWO knowledge that has earned Crew R-147 the reputation of being one of Whiteman AFB's finest crews.

B-36 REMEMBERED . . .

Cont'd from page 5

roots. Normal capacity on models up to the H was about 30,000 gallons of 115/145 aviation gas. On the J, additional tanks were outboard of numbers 1 and 6. Bomb bay tanks were available but rarely used. The J-47 also burned AV gas as the B-52 usually did when refueling from a KC-97. There was no inflight refueling capability on the B-36. To sit on the wing and pump 15 or 20 thousand gallons at Ellsworth in the winter time was a sporty situation. Hydrant single point came in around 1954 which made refueling relatively simple. Each radial engine had its own oil tank which held 200 gallons. Except for long missions when they were topped off, normally only 150 gallons were carried in each tank.

Instruments: Engine instruments were basic. However, the number of them kept two engineers busy monitoring them. Each engine had 12 primary instruments, RPM, torque, manifold pressure, fuel pressure, oil pressure, water pressure, fuel flow, cylinder head temperature, oil temperature, oil quantity, carburetor air temperature and turbo rpm. Multiplied by six gives you 72, not counting fuel quantity, electrical, wing and tail anti-ice, and one master tachometer used for propeller governing. The jets were controlled by the pilot with overhead throttles and only oil pressure, fuel pressure, RPM and EGT (called TPT — tail pipe temperature, then). EPR did not exist. Flight instruments were the usual pitot/static type, turn and bank, rate of climb, and SCR-716 altimeters.

Avionics on the B-36 included the K-1 bombing navigation equipment and two separate radios, the ARC-3 and the ARC-27. The fire control system comprised seven remotely controlled twin 20 millimeter cannon stowable turrets and one radar controlled APQ-3 tail turret, also twin 20 millimeter cannon. Total ammunition load was 9,600 rounds. Later models were feather weighted leaving only the tail turret for defense. The theory was that the B-36 could fly so high and fast that few, if any, jet fighters could get to it, and then only from the rear. In the early 50's that was a good theory.

The B-36 was constantly deployed to overseas locations for varying periods. While a member of the 28th, I made two 90-day trips, one to England in 1956 and the other in 1955 to Guam.

The total B-36 deliveries were 383 with a cost of $3 million each. These were assigned to nine wings in the CONUS and one in Puerto Rico. Four other versions of the aircraft were manufactured (1) the YB-60 powered by eight J-57 engines each producing 8,700 pounds of thrust, but overall it was vastly inferior to the B-52, (2) the GRB-36F was a version designed to carry on F-84E in its bomb bay or attached to its wing tip, (3) the next version was the NB-36H which was a test bed for an airborne nuclear reactor. This reactor had nothing to do, however, with the propulsion of the aircraft and finally, (4) the C-99 cargo version. It was a very economical aircraft but a full load of cargo of 100,000 pounds was rarely available. The only one built had over 7,000 hours on it when it was retired.

The longest B-36 flight was made by a factory crew and totaled over 51 hours in January 1951.

Flight Crew: The size of an operational crew would vary depending on the length of the mission. A long mission would mean spare crewmembers would be carried. A normal crew was the aircraft commander and first pilot, two engineers, two radio operators, radar bombardiering navigator and eight gunners. On the RB-36 add one photo navigator, three photographers and three ECM operators. Ground crews normally consisted of a crew chief, assistant and one crewmember.

As a ground crewmember whose primary job was to ready the B-36 for a "test hop" (functional check flight) after it went through a periodic inspection dock, I had many interesting, funny and exciting experiences both on the ground and in flight. After a periodic inspection you never knew what to expect when the first "green" run was made. You had to be prepared for anything. One example that I can recall was a malfunction in the prop governing system causing a prop to run away on takeoff going from 2,800 RPM to a very exciting 4,100. Our crews were very good and the engineer managed to get it feathered immediately but it did require an engine change when we landed. Another rather amusing occasion revealed how calm people can be in emergencies. The incident occurred during an operational check of J-1 and J-2. To crank a jet required at least two alternator engines be running with alternators on the line and parallel to provide enough electrical power for jet engine start. With me in the engineer's seat monitoring the two alternator engines and the crew chief in the pilot's seat, we started the cranking sequence on J-1 and J-2. Soon after they were both running the ground man said over interphone, "You better cut J-1." The crew chief's answer was, "Why?" followed by a very calm, business-like "Because it's on fire," from the ground man. It was on fire and burning from the intake over the top of the wing leading edge. Needless to say, we had a very exciting few minutes until the fire department arrived to finally put out the fire. The calmness in the man's voice was really amazing because he knew, as we all did, that there were around 15,000 gallons of high octane fuel within a few feet of the fire.

Another incident that I remember very well and which I thought might ruin my career occurred when we were preparing to load bank alternators in Spot 63 on aircraft 5750. Load banking consisted of adjustment of the "droop circuit" to insure that each alternator would carry its share of the electrical load when paralleled. Load banking required the alternator engines (2-3-4 and 5) to be running. Since it was 22 January 1957, it was very cold at Ellsworth. Cranking a 4360 in very cold weather can be somewhat difficult but I managed to get all four running without preheat and was waiting for the necessary temperatures to be reached when a B-5 stand, parked with brakes locked between 4 and 5, rolled into number 5 which was idling at 1,250 RPM. You might imagine the results. My first thought was the right main gear had collapsed so I shut down everything. Prior to it hitting the propeller, the ground man told me that the power unit (the B-10 which was the forerunner of the MD-3) was on fire. I told him to put the fire bottle on it and let me know if I should shut down. The ground man, in so doing, never saw the stand to warn me. This is the incident that made me realize how important flight line safety is because cold weather, blowing wind and fire can all add up to cause a very serious accident. I have pictures of what was left and whenever I look at them I am thankful that no one was hurt. Damage cost was estimated to be $50,000. It would have been much more if the engine had received "sudden stoppage," which is an automatic overhaul, but it just kept chugging away, slicing off a chunk each time a blade hit the stand.

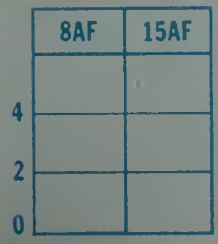
These are only a few of the things that happened to me; other crew chiefs and dock chiefs had their own similar experiences. When the 28th Bomb Wing has its reunion every three years, many war stories about the B-36 are relived by everyone.

The B-36 played a very important role in SAC's history and the men who flew it and the men who maintained it are very proud to have been a part of that history. Probably the highest compliment that can be paid to this strategic bomber was that it never had to be used for its design purpose, nor did it ever fire a shot in anger. It is, perhaps, for that reason that it is slowly being forgotten. However, the men and the families who knew it will never forget the TDYs, the late nights, the long missions and especially the B-36's unique droning sound when one flew by at high altitude.

SAC'S FLYING SAFETY RECORD

CLASS A FLIGHT MISHAPS

YEAR	75	76	77	78	79	80	81	82	83	84	85
TOTAL MISHAPS	4	4	4	1	5	4	4	2	2	3	0
FLYING HOURS 100,000	4.2	3.6	3.7	3.6	3.6	3.4	3.5	3.5	3.0	3.4*	0.3*
FATALITIES	7	22	10	5	7	2	14	9	7	2	0
RATE	1.0	1.0	1.1	.28	1.4	1.2	1.2	.58	.65	.89	0.0



1985 CLASS A MISHAPS	

CLASS B	
JAN	0
1985	0

CLASS C	
JAN	24
1985	24

FLYING HOURS	
JAN	26,318*
1985	26,318*

*ESTIMATED FLYING HOURS

The

Real Pilot

A bit of humor by our friends to the north in **Flight Comment Magazine.** Maj Steve Gallimore, CAF, is the author.

Every real pilot knows that the true and final test of a driver's prowess is the "morning-after" departure, not the airshow itself. This is the moment that separates the men of true steel (mettle?) from the frauds — the opportunity to really kick !$$. Come on now, it's well known that many so-called pilots actually plan and train for the airshow. But come the day of departure, well . . . that's when every real pilot is carefully watching for the other guy's fly-off: a challenge amongst peers; the unwritten competition; the duty of gladiators. No practices, just straight guts and skill — an opportunity to spit in death's face, and win the adulation of the other jocks and first pick of the nurses at the next show.

The "morning-after" begins at dawn for real pilots — or just about the time the beer machine runs out. Image is especially critical at this time. The real pilot ensures his arrival in the dining room is carefully orchestrated: you walk in alone, with an air of defiance, a sense of purpose, and a clean turtleneck on. Your dark shades and spurs (whether you need them or not) project that "cutting out" look. The real pilot never orders a traditional breakfast, but meticulously balances his nutritional intake from the night before with a glass of tomato juice, half-bowl of coco puffs, and a cigarette. Now you're ready . . .

Your approach to your bird is done with panache. Every real pilot never walks out to the flight line; he ensures he has a servicing tech available to drive him over to his sleek machine and on-load his duffle bag. The real pilot never seems to take notice of the scrutinizing eyes of his peers but pays careful attention to displaying his sense of style. Nonchalantly walk over to one of the ladies from the night before — who has come to sigh and bid you goodbye — and hand her your autograph. Then casually let it slip that your next mission is the "big one" and you may not make it back — let your voice crack a couple of times while talking about it. If they want to make a grab for you, let them — give them one last moment to treasure — every real pilot knows it's a big deal for them.

Now, with your star-spangled, hand-painted helmet casually draped over the glare shield, strap your aircraft on and motion to the tech that he's no longer needed. At this point real pilots can appear to deviate from the norm and fake blowing a kiss to the admirers while you actually pop a penicillin. If you feel ill, remember . . . real pilots never take gravol, they use their index finger (real pilot gag). Now don your Darth Vader cap, spin your finger while hitting the air start button, and hope like hell you get a "hard" light. Don't wait around: real pilots always ensure the brakes are off and the throttle is being advanced to at least 65% so the roll starts immediately after the last chock is removed. Then, if the aircraft has been facing the crowd, do a smart 180° and advance the throttle even further — giving everyone an indication of how really hot you and your machine are (omit this procedure if the BComd's wife is amongst the "others").

The real pilot does all his checks on the roll and indicates to the tower that he'll be taking off immediately upon closing the canopy. This is when the real pilot shows his true colours: the take off is smooth and smartly executed, with the gear handle being lifted just as the nosewheel comes off the ground — you know about microswitches and every aircraft system . . . your mind is a steel trap. Be natural, be impulsive, lose your checklist, and give those doorknobs on the ground what they came to see.

The first pass should be standard — loud, low and just below mach, appearing to disappear over the horizon towards home plate. Only the important people — your true peers — on the ground will know that there is an encore.

Minutes later the real show begins. At this point every real pilot executes a supersonic, razor-edge, low-level pass down the flight line striking fear into the hearts of anyone over 3′ tall. Be sure to place the aircraft into a seemingly unrecoverable flight attitude and feel that wonderful adrenalin turning your crank. People on the ground expect the old top rudder kick and wings level recovery but you give them even more; now feel even more adrenalin pump through your arteries. Now feel . . . nothing at all — like all true legendary real pilots eventually don't.

Don't worry . . . the coroner will verify that you were made of the right stuff.

SAC SAFETY SCREEN

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW AFR 127-2/SS1.*

92 AREFS, Fairchild Crew S-181: IP Capt James J Kristl, CP Capt Jay Mershon, IN Capt Kent L Johnson, IB TSgt Jack L Peters

92 AREFS, Fairchild E-165: AC Capt Anthony W Belford, CP 2Lt David P Duquemin, IN 1Lt John C Shoemaker, IB SSgt Doyle E Glaze

43 AREFS, Fairchild Crew R-111: P Capt Tracey E McFadden, CP Capt Thomas K Bostwick, N 1Lt Scott B Milton, BO Sgt Karl D Smith

43 AREFS, Fairchild Crew E-124: P Capt Roger S Paulson, CP 2Lt Seth Peterson, N 1Lt Antoine M Garton, BO SSgt Allan R Wesemann

92 BMW, Fairchild Crew S-02: P Lt Col Philip G Nelson, CP 1Lt James L Bryan, RN Capt Lynn J Stone, N 1Lt Craig S Girard, EWO Capt Sean M Yeronick, G TSgt Michael A Moffatt

92 BMW, Fairchild Crew E-11: P Capt Lee E Morton, CP 1Lt Jose M Pauda, RN Maj Paul T Brown, N Capt Jeffery L Bauer, EWO 1Lt Victor P Jones, G SrA Roger A Drumm

92 BMW, Fairchild Crew E-14: P Capt John T Schlegel, CP Capt Bobby J Smith, RN Capt Dominick Manginelli, N 1Lt Robert T Taylor, EWO 1Lt David G Cothran, G SSgt David G Stockdale

99 AREFS, Robins Crew R-164: FP Capt Mario Mastrandrea Jr, CP Capt Kurt A Green, NN Capt Daniel A Narrigon, BO Sgt Mahlon L Marr

912 AREFS, Robins Crew E-134: IP Capt Mark A Brown, CP Capt Richard L Flerra, IN 1Lt Barbara Faulkenberry, BO SSgt John P Beringer

69 BMS, Loring Crew E-32: P Capt James P Stanton, CP 1Lt Edward H Shiembob, RN Capt Antonio Mendibur, N 1Lt Kenneth D Mullins, EWO Capt Ronald A Rosenberger, G SSgt Patrick J Nestor

407 AREFS, Loring Crew E-173: P Capt William L Bishop, CP 1Lt Ricky L Vandagriff, N Capt John A Arsenault, BO A1C Charles A Roskam

668 BMS, Griffiss Crew S-11: P Capt William M Ennis, CP Capt Salvatore J Baggetta, RN Capt Richard G Miles, N 1Lt John J Dixon, EWO 1Lt Gregg B Bourke, AG SSgt Michael W Weinmann

912 AREFS, Robins Crew E-133: IP Capt Ronald C Sharpe, CP Capt Burton C Ruff, NN Capt Robert R Money, BO SrA Jesus M Lopez

41 AREFS, Griffis Crew R-107: P Capt John J Lach, CP 1Lt Robert F Wenzel Jr, N 2Lt Craig R Hansom, BO A1C Melanie B Potter

524 BMS, Wurtsmith Crew E-31: AC Capt John H Payne, CP 1Lt John H Nelson, RN Capt Kevin J Wilson, NN 1Lt Jeffrey W Herman, EWO 2Lt Kent B Williams, AG SSgt Richard L Walker

920 AREFS, Wurtsmith Crew S-140: AC Maj Scott K Williams, CP 1Lt Gary L Williams, NN Capt Margret A Glasgow, BO SSgt Michael N Eubank

42 AREFS, Loring Crew R-134: P Capt Daniel M Gasparovic, CP 1Lt Darren W McDew, N 1Lt Richard E Gaetano, BO SSgt David A Vickers

911 AREFS, Seymour Johnson Crew S-101: P Maj David L Ray, CP Capt Susan Y Desjardins, N Capt Susan M Guindon, BO TSgt Stephen A Sweet

911 AREFS, Seymour Johnson Crew E-112: P Capt Michael D Moore, CP Capt John P Ley, N 1Lt David M Callis, BO SSgt Albert G Boothby Jr

46 BMS, Grand Forks Crew E-27: P Capt Richard E Smith, CP Capt Neil A Woodcock, RN Maj Ralph M Torelli, N 1Lt Alvin M Watkins, EWO Maj Randall M Enright, G TSgt Michael T Regan

44 SMW, Ellsworth Crew R-031: MCCC Capt Dean P Hendrickson, DMCCC Capt Barry J Bennett

351 SMW, Whiteman Crew E-072: MCCC Capt Lyndell L Pugh, DMCCC 2Lt Russell J Smith Jr

UNIVERSITY OF FLORIDA
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FLARE

HALL OF FAME

OVER TWENTY-NINE YEARS

170 AREFG, McGuire (NJANG)	Feb. '56

OVER TWENTY-SIX YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar. '58
157 AREFG, Pease (NHANG)	Jun '58

OVER TWENTY-FIVE YEARS

940 AREFG, Mather (USAFR)	May '59

OVER TWENTY-FOUR YEARS

151 AREFG, Salt Lake City (UTANG)	Feb. '61

OVER TWENTY-TRHEE YEARS

134 AREFG, McGhee Tyson (TNANG)	Aug. '61
11 SG, Fairford	Feb. '62

OVER TWENTY-TWO YEARS

340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug. '62

OVER TWENTY YEARS

160 AREFG, Rickenbacker (OHANG)	Dec. '64

OVER NINETEEN YEARS

320 BMW, Mather	Jul '65

OVER EIGHTEEN YEARS

452 AREFW, March (USAFR)	Sept '66

OVER SEVENTEEN YEARS

55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67

OVER SIXTEEN YEARS

5 BMW, Minot	Feb. '69

OVER FIFTEEN YEARS

141 AREFW, Fairchild (WAANG)	Oct '69

OVER FOURTEEN YEARS

28 BMW, Ellsworth	May '70

OVER TWELVE YEARS

101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Grissom	Aug '72

OVER ELEVEN YEARS

379 BMW, Wurtsmith	Apr '73
931 AREFG, Grissom (USAFR)	Feb '74

OVER TEN YEARS

384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74
43 SW, Andersen	Dec '74

OVER NINE YEARS

68 AREFG, Seymour Johnson	Sep '75

OVER SEVEN YEARS

410 BMW, K.I. Sawyer	Apr '77
190 AREFG, Forbes (KSANG)	Apr '77
128 AREFG, Milwaukee (WIANG)	Jul '77

OVER FIVE YEARS

376 SW, Kadena	Aug '79

OVER FOUR YEARS

7 BMW, Carswell	Jul '80
319 BMW, Grand Forks	Sept '80
380 BMW, Plattsburgh	Oct '80
97 BMW, Blythville	Jan '81

ICBM

OVER TWENTY YEARS

1 STRAD, Vandenberg	Sept '64

OVER FOURTEEN YEARS

341 SMW, Malmstrom	Apr '70

OVER TWELVE YEARS

321 SMW, Grand Forks	Aug '72

OVER TEN YEARS

351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74

OVER SIX YEARS

381 SMW, McConnell	Aug '78
44 SMW, Ellsworth	Nov '78

OVER FIVE YEARS

90 SMW, F.E. Warren	Dec '79

OVER FOUR YEARS

308 SMW, Little Rock	Sept '80

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.